

ABSTRACT

A steroid comprising a 17-spirolactone or corresponding open lactone structure is obtained by carbonylation of a 17-alkenyl or 17-alkynyl substrate. A 17-alkenyl intermediate may be prepared by semi-hydrogenation of a 17-alkynyl group. Multiple reaction schemes are disclosed for preparation of a 3-keto-9,11-epoxy-17-spirolactone steroid such as eplerenone. Novel intermediates are also disclosed, as well as steps for forming such novel intermediates, or converting them to further intermediates or products, by semi-hydrogenation, carbonylation, 6,7-dehydrogenation, furylation or other transformations or combinations thereof.